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(54) An ink supply port arrangement for a multi-colour ink cartridge

(57) An ink cartridge 1 has a plurality of ink chambers 2a-2f wherein ink supply ports 4a-4f associated with the chambers are arranged in two linear arrays, such that the size of the cartridge can be reduced, and easy loading of the cartridge is ensured. The ink supply ports may be arranged in a zig-zag, offset manner to allow for a further reduction in the size of the chambers and cartridge. At least one reinforcing rib (15, Fig. 5(a)) is provided on the outside of the cartridge, to ensure the strength and rigidity of the cartridge. Circuitous grooves (35a-35f, Fig. 8(b)) are formed in the surface of a cover member (30) so that the grooves (35a-35c) communicating with ink chambers (12a-12c, Fig. 8(a)) having smaller volumes are longer than grooves (35d-35f) communicating with chambers (12d-12f) having larger volumes, thus insuring uniform viscosities of all of the inks.

FIG.1 (a)

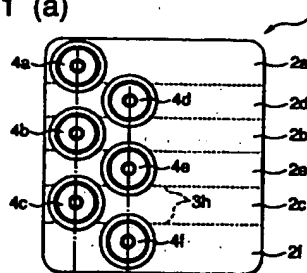
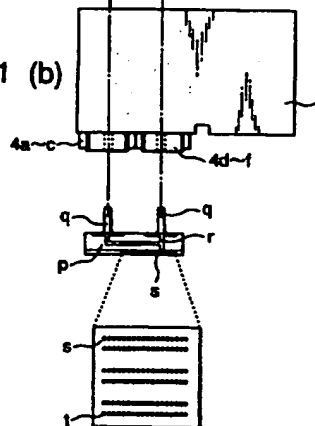


FIG.1 (b)



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09158009	30.05.1997	

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(54) Reinforced ridged cover for ink cartridge and cartridge loading mechanism

(57) An air impermeable but soft polypropylene ink cartridge 1 has reinforcing ridges 6 projected from corner portions of peripheral walls 2,3 and a thick-walled opening end edge 4. A cover 20 is sealed to the cartridge by welding and has longitudinal ridges 21 formed on an inner surface thereof, and shape retaining ridges (23, Fig. 3(a)) which project integrally from an outer surface of the ridges 21 so as to engage the body walls, so that deformation of the cartridge is suppressed during welding - any burrs thus formed are collected in a groove 25 of the cover. A cartridge (120, Fig. 12(a)-(d)) may be loaded onto a carriage without breaking an ink supply needle (119) by engaging a recess 15 in the lower surface of the cartridge with a support rod (117) of a lifter (115), and closing a pivotable carriage cover body (110) while guiding the lifter with a guide groove (106) parallel to the axial centre of the needle.

FIG. 1

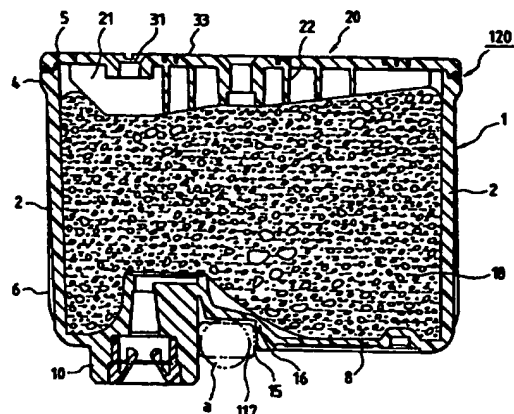


FIG. 6

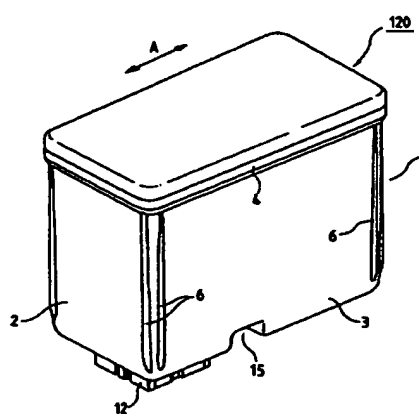


FIG. 1

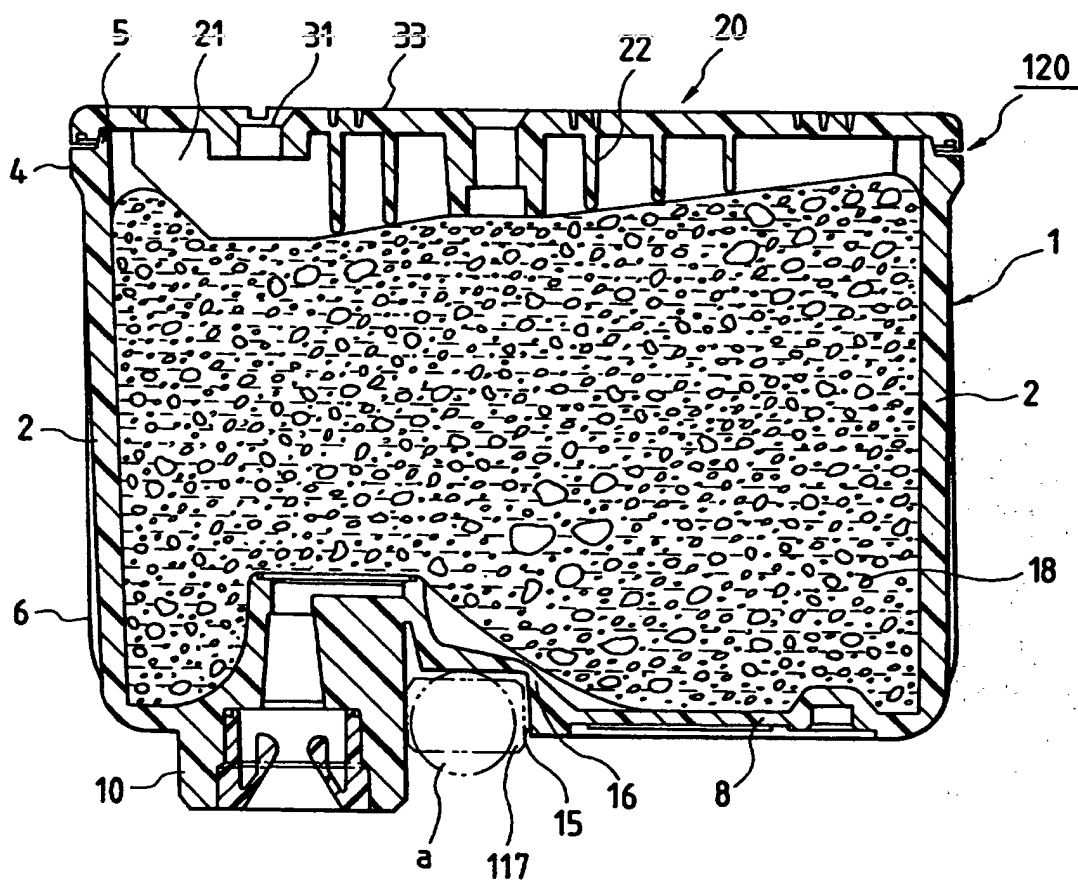


FIG. 2(a)

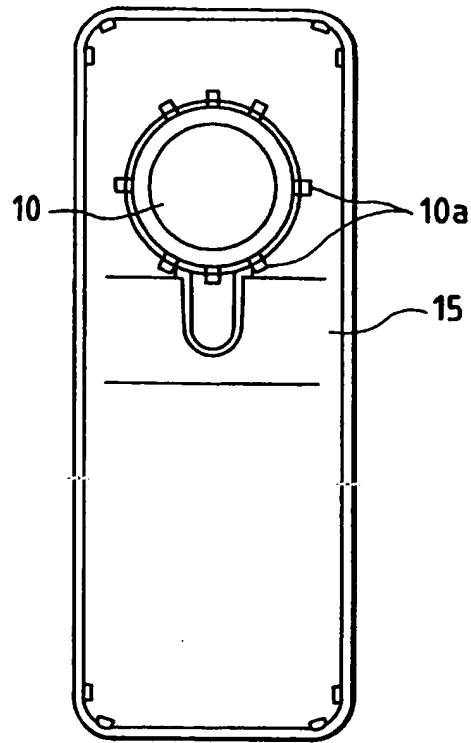


FIG. 2(b)

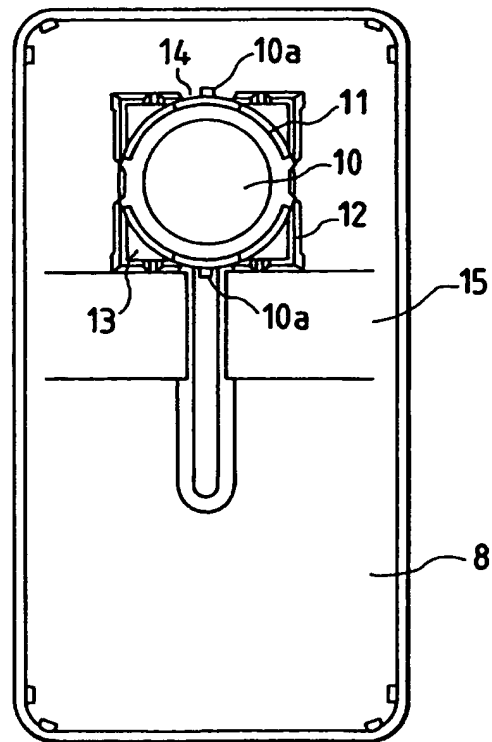


FIG. 3(a)

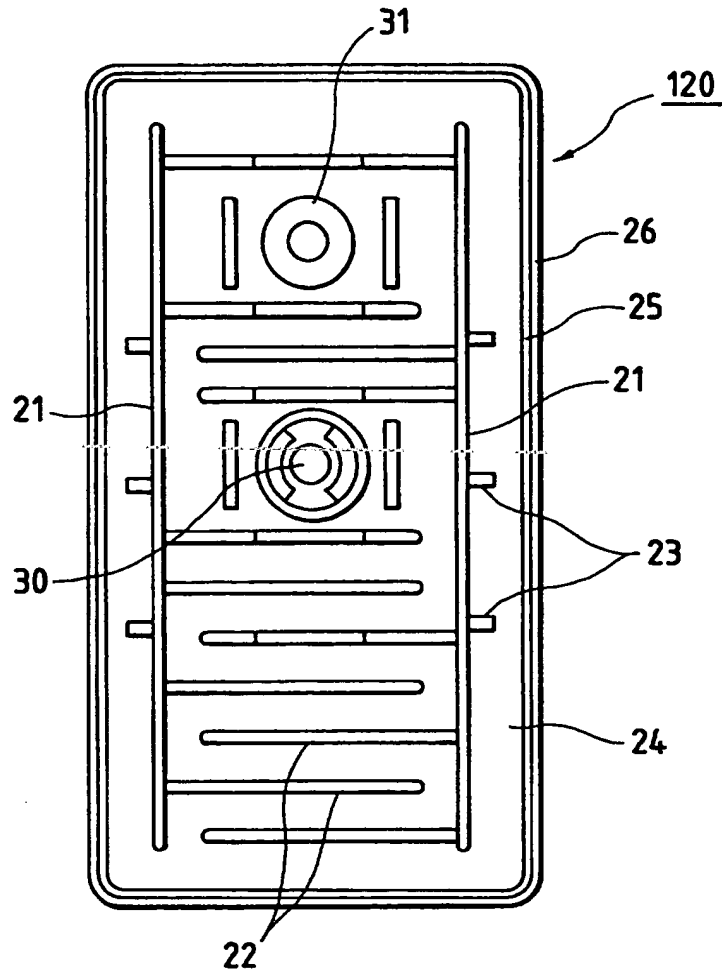
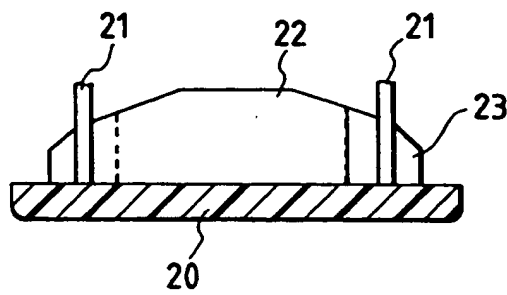


FIG. 3(b)



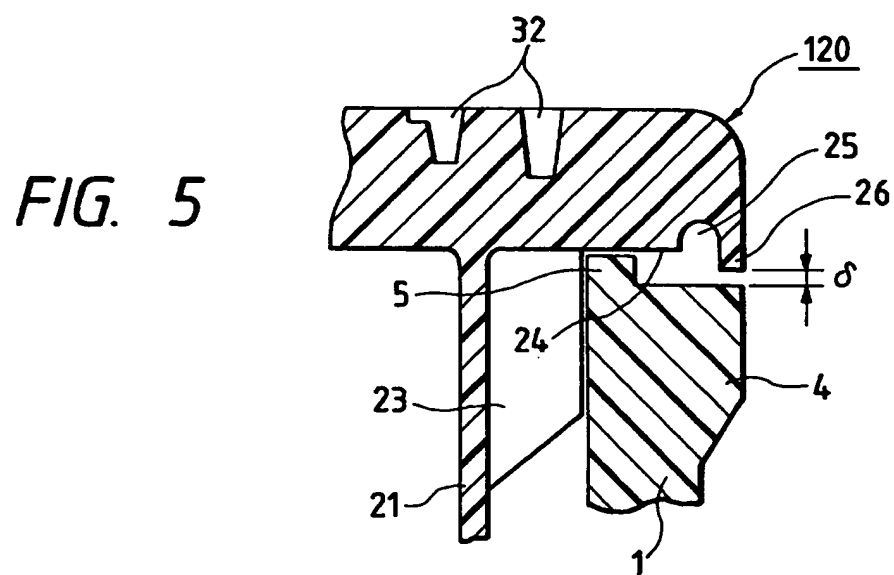
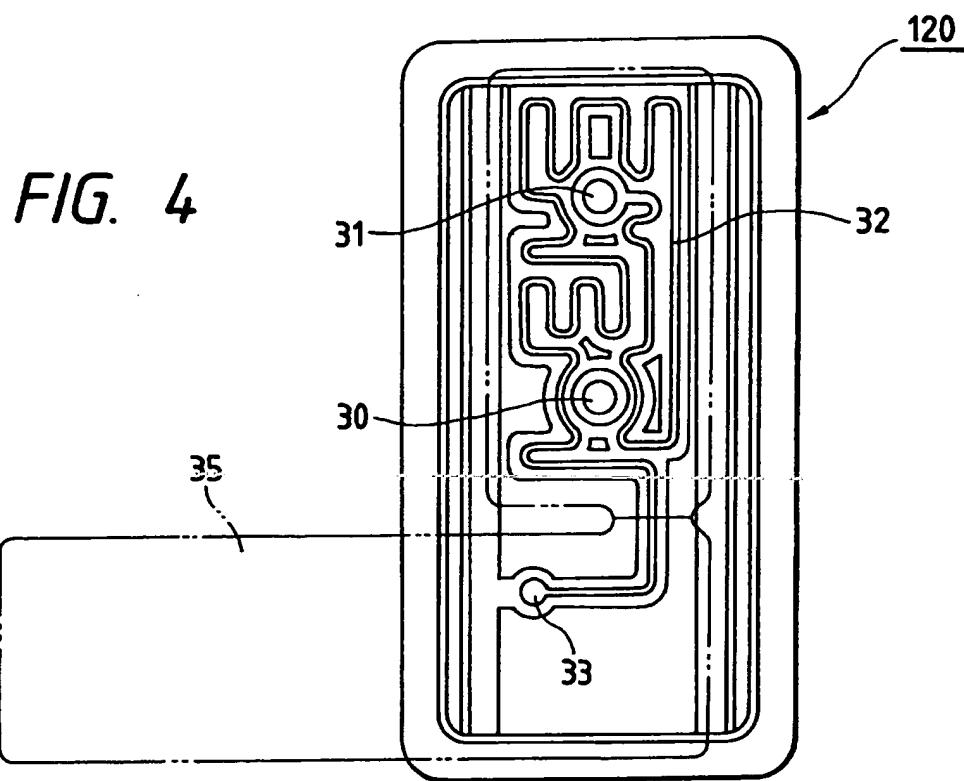


FIG. 6

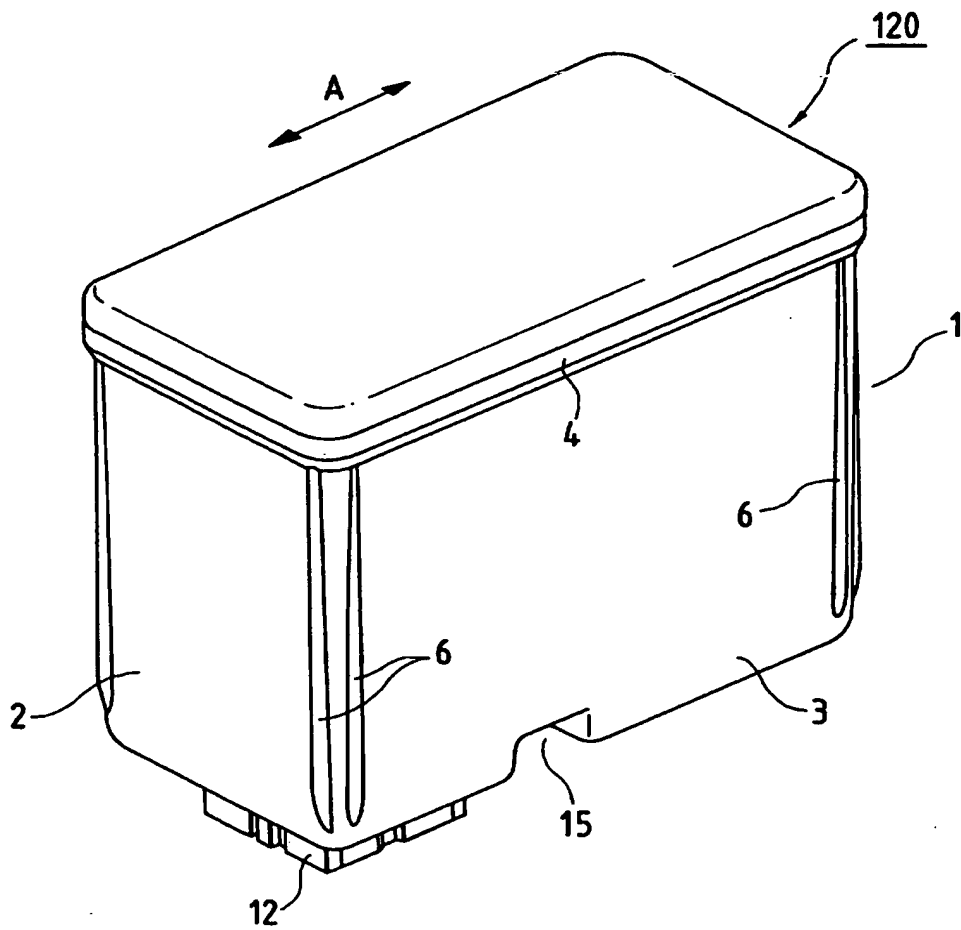


FIG. 7

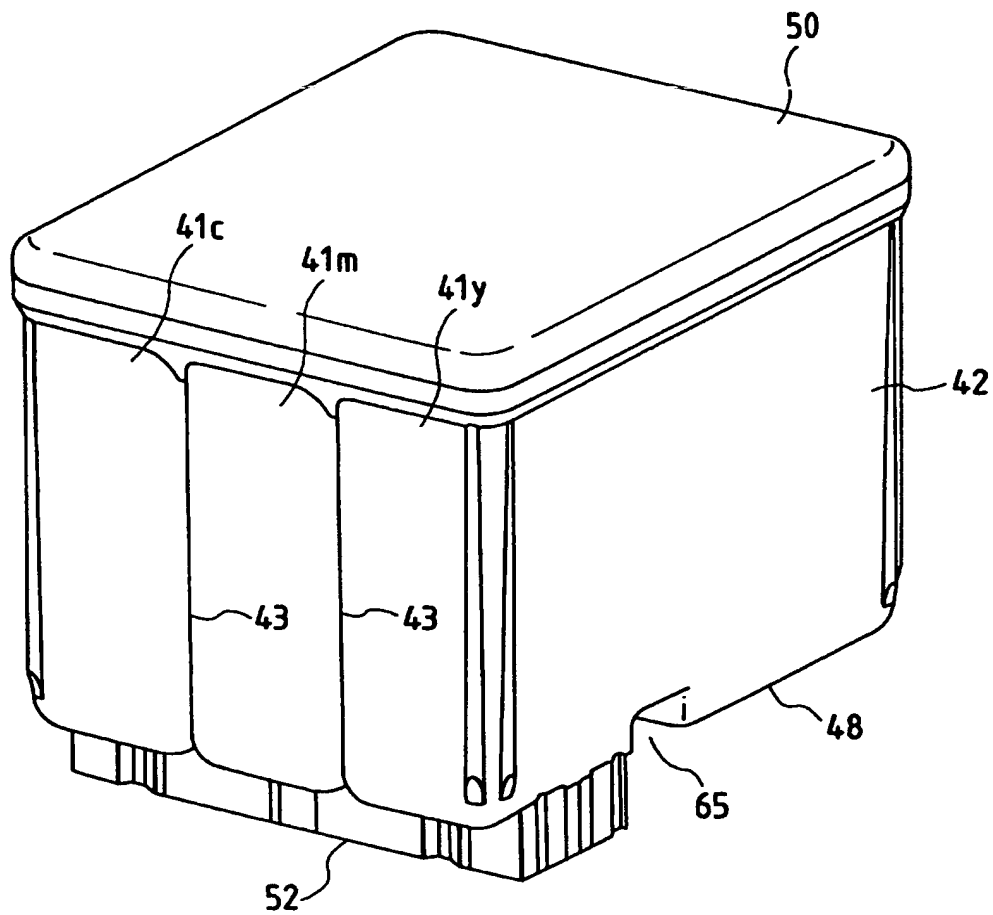


FIG. 8

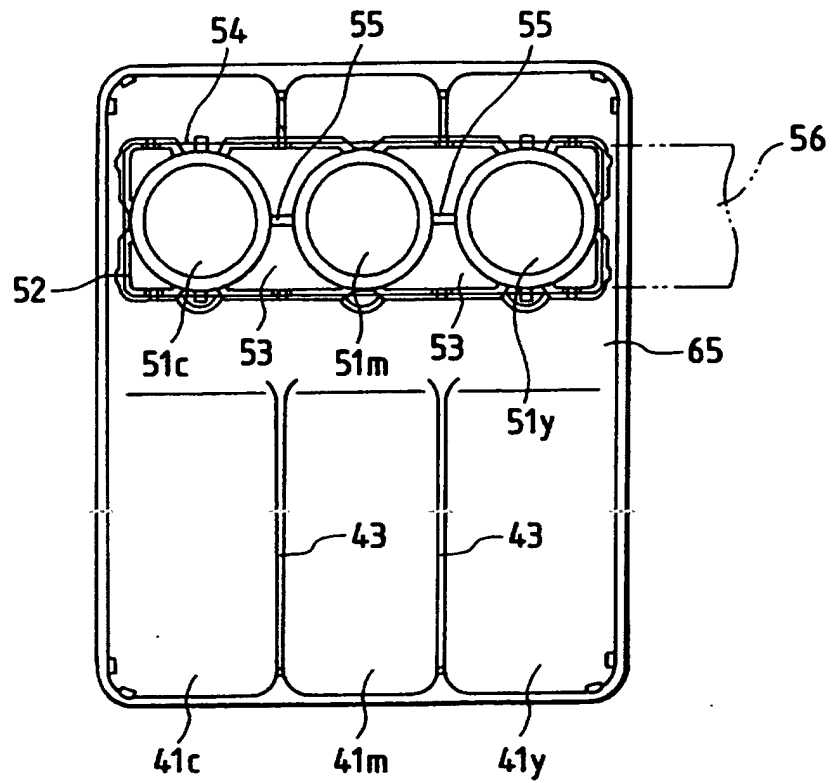


FIG. 10

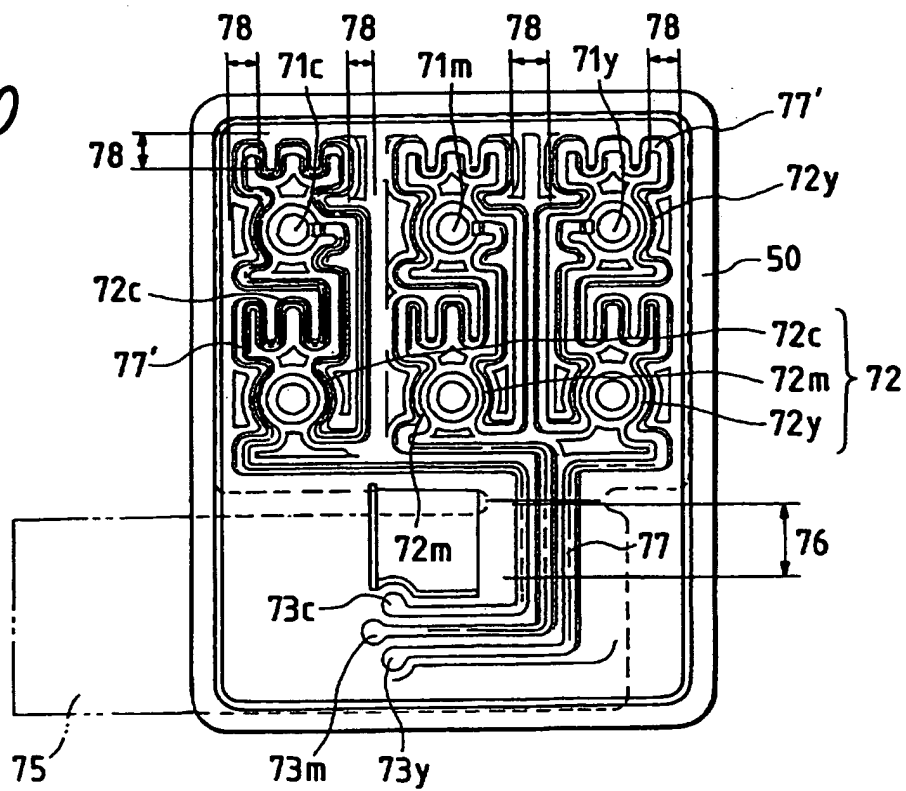


FIG. 9(a)

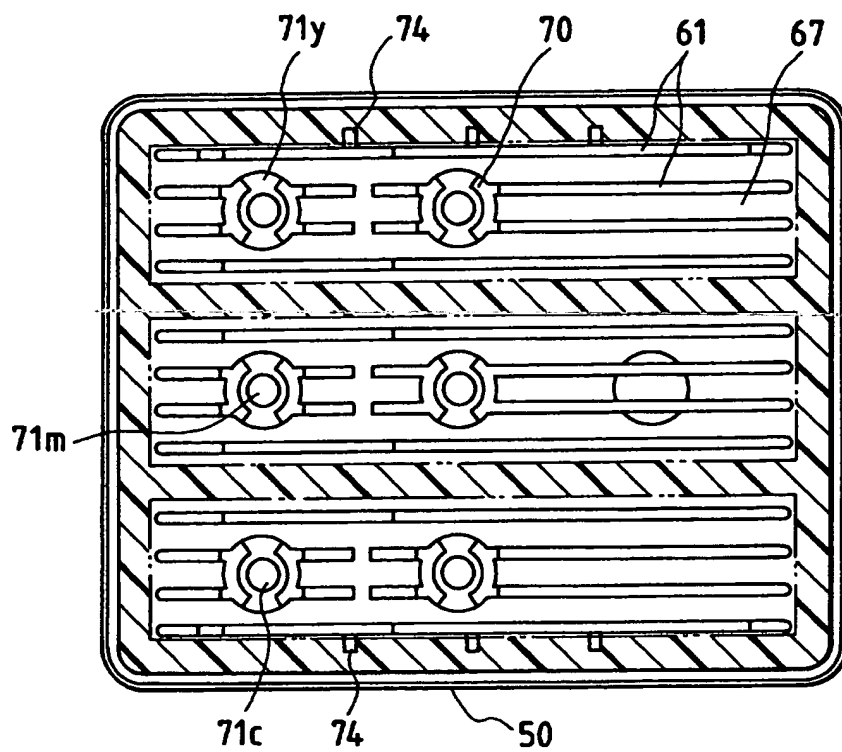


FIG. 9(b)

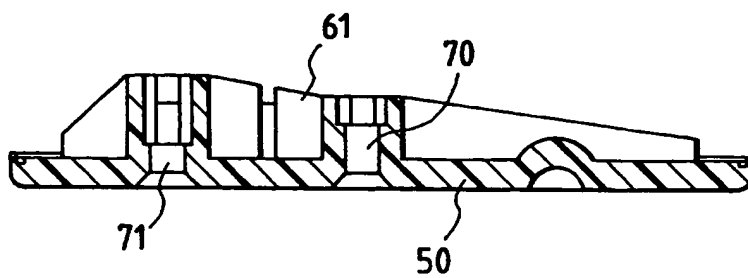


FIG. 11

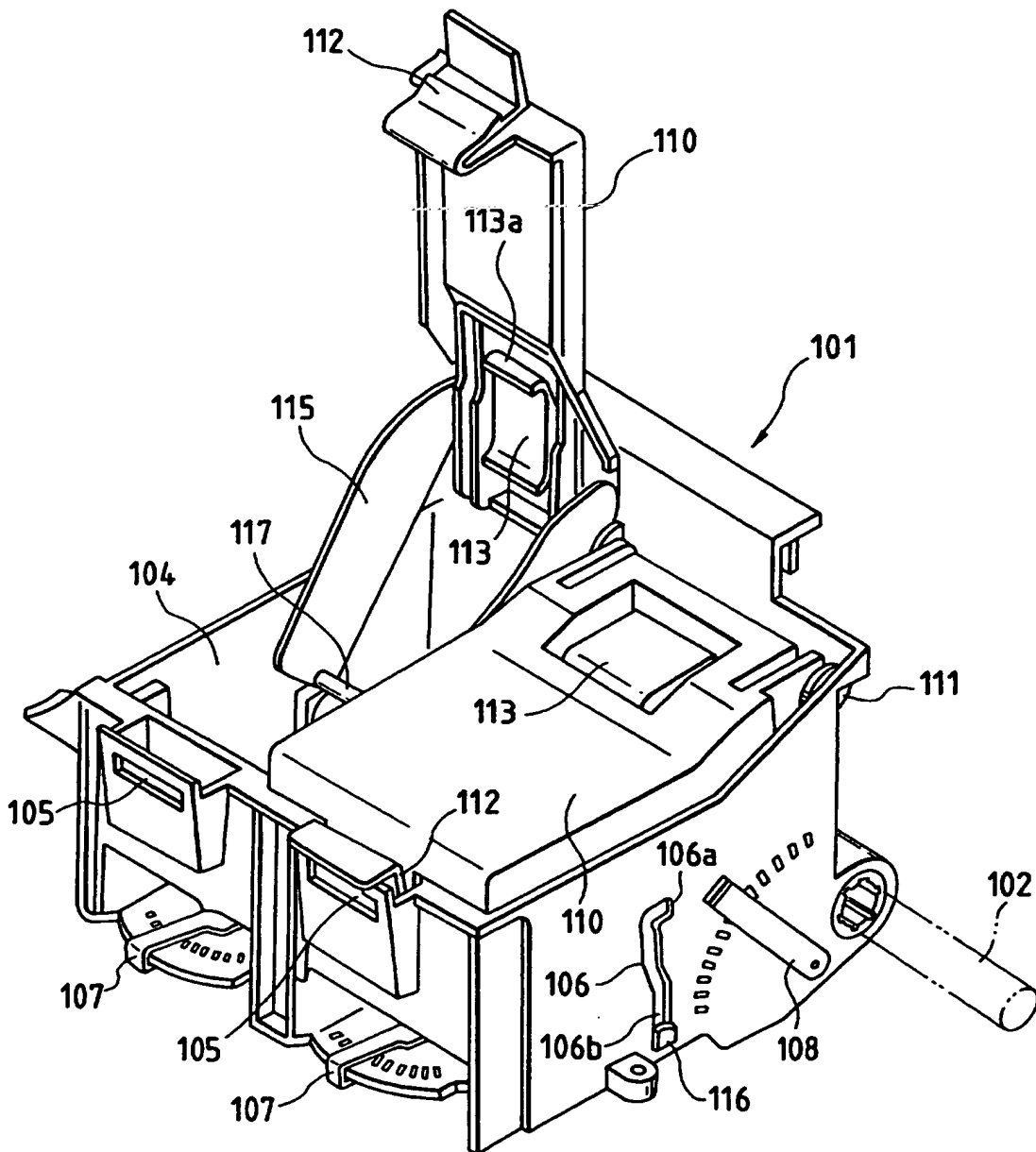


FIG. 12(a)

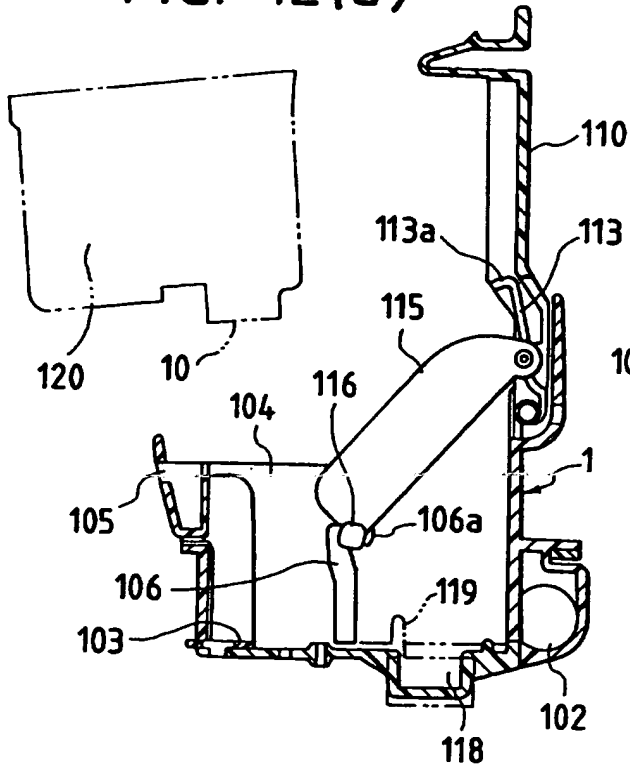


FIG. 12(c)

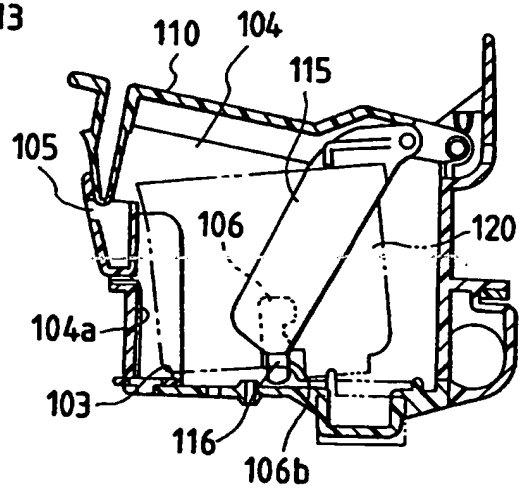


FIG. 12(b)

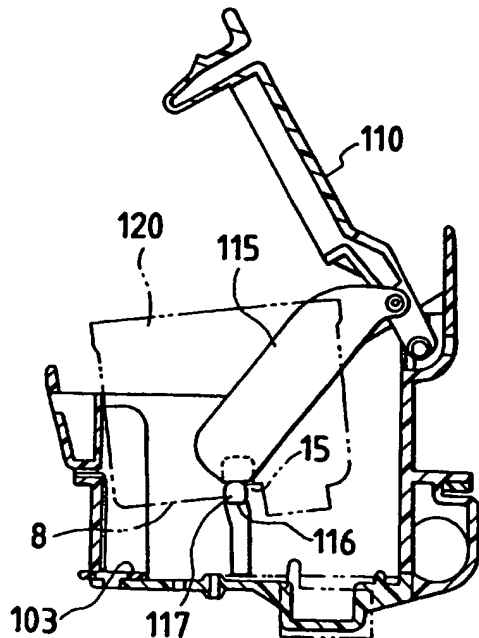


FIG. 12(d)

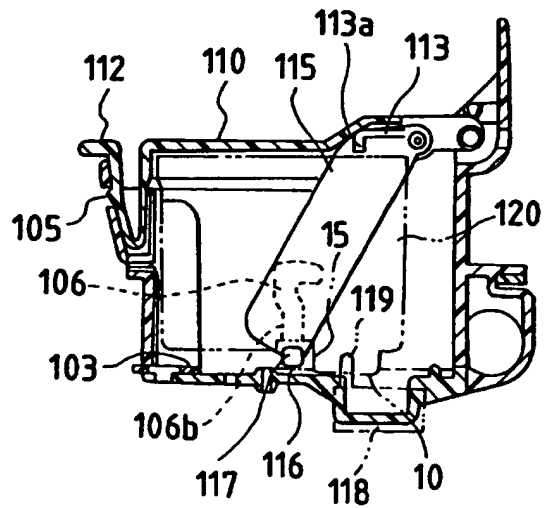


FIG. 13

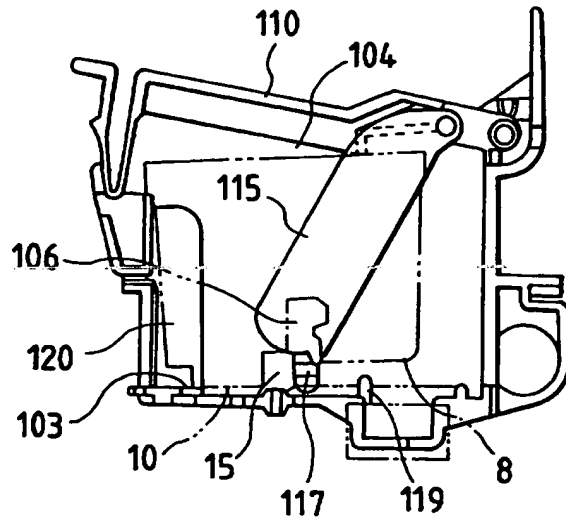


FIG. 14

